



Glossary

GRIFFITH OBSERVATORY IN-PERSON SCHOOL PROGRAM

astronomy – the study of space and everything in it, including, but not limited to, stars, planets, galaxies, nebulae, black holes, asteroids, comets, and the search for life beyond Earth.

atom – a basic unit of matter. An atom has a nucleus containing protons and neutrons and a cloud of electrons surrounding the nucleus.

atmosphere – the layer of gas that surrounds Earth. It is often called air. Other planets, and some of their larger moons, also have atmospheres.

carbon – the sixth element on the periodic table of elements. It is the chemical basis for life as we know it.

cell – the smallest unit of life. Living organisms are made of cells.

comet – a small, icy object from the outer part of the solar system. Comets form tails of gas and dust as they approach the Sun and warm up. Comets contain some of the essential ingredients for life, including carbon and water.

element – a pure substance containing only one type of atom.

fluid – state of matter in which molecules are free to move around rather than stay in a fixed (solid) structure.

fusion – a process by which two atomic nuclei are squeezed, or fused, together under intense heat and pressure. This occurs naturally in the center of a star and makes it shine. Our Sun fuses hydrogen atoms together to produce helium.

galaxy – a massive collection of stars, gas, dust, and other celestial objects bound together into a single system by gravity. A galaxy may contain millions or trillions of stars. The Earth and Sun are in the Milky Way Galaxy.

gas – a fluid state of matter in which the atoms and molecules are more or less in random motion. A gas can expand endlessly and so does not have a rigid shape and volume.

gravity – a fundamental force of nature in which all things with mass or energy—including planets, stars, galaxies, and even light—are brought toward one another.

habitable or “Goldilocks” zone – a zone around a star in which temperature conditions are just right for liquid water to exist on an Earth-like planet.

hypothesis – an educated guess based on limited evidence and with no assumption that the guess is correct. An hypothesis is the starting point for scientific investigation and testing.

inertia – the tendency of an object to resist a change in its current state of motion. An object at rest will stay at rest unless forced to move, just as an object in motion will stay in motion unless forced to change its motion.

Kuiper Belt – the region in the solar system beyond the orbit of Neptune. It contains a large number of small, icy objects. Pluto is the most famous object in the Kuiper Belt. Comets also come from this region of space.

light-year – the distance that a beam of light can travel through space in one Earth year. It is approximately 6 trillion miles.

liquid – a fluid state of matter. The particles move and can freely form a distinct surface at the boundaries of the fluid.

meteorite – a stony or metallic object from space that survives entry into the Earth's atmosphere and lands on the surface of the Earth.

microorganism or microbe – a microscopic living organism, especially a bacterium, virus, or fungus. Single-cell microbes were Earth's first lifeforms.

molecule – a group of atoms bonded together. The atoms may be the same element or different elements.

observatory – a place for observing and studying astronomical objects and events.

orbit – a path followed by an object under the influence of gravity from another body. The Earth orbits the Sun. The Moon and the International Space Station orbit the Earth.

organic compound – a complex molecule that contains one or more carbon atoms and other elements. Certain organic compounds are chemically essential to life as we know it.

planet – an object that (a) orbits the Sun, (b) is big enough to have enough gravity to be round in shape, and (c) has cleared away any objects of a similar size near its orbit. There are eight planets in our solar system: Mercury, Venus, Earth, Mars, Jupiter, Saturn, Uranus, and Neptune.

probe – a unmanned spacecraft sent outside of Earth's orbit to gather information about distant planets and outer space.

rover – a vehicle that travels on the surface of a planet, moon, or other astronomical object.

solar system – a system of planets, moons, asteroids, comets, and other small objects that orbit a star. The Sun is the star in our solar system. Earth is a planet in our solar system.

spacecraft – a vehicle or machine that can carry people, instruments, or cargo beyond Earth's atmosphere into space and back home again or to some other destination.

star – a celestial body of hot, dense gas that generates light and other energy and is held together by its own gravity. The Sun is a star, and while stars look like tiny pinpoints of light to us, many are larger than the Sun. They look tiny because they are so far away.

telescope – an instrument that uses lenses and/or mirrors to gather and focus light for observation. In astronomy, telescopes allow the viewer to study distant objects in detail by making them appear larger, brighter, and sharper than what is seen with the unaided eye.

theory – a scientific explanation that is supported by overwhelming experimental evidence and widespread agreement within the scientific community.

water cycle – the path that all water follows as it moves around Earth in different states of matter.